



American Knife & Tool Institute

AKTI APPROVED KNIFE DEFINITIONS

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INTRODUCTION

Numerous laws exist in the United States of America which provide that it is a crime to possess certain types of knives. These laws often provide that the crime has been committed upon the mere possession of a knife of the prohibited type, and no proof of criminal intent or incipient crime is required. Other prohibitions as to knives are typically based on blade length and/or mechanical movement of the blade (for example, a switchblade).

It is the position of AKTI that knives are inanimate objects, and remain so regardless of various characteristics, such as length of blade, shape or style, the presence or absence of a hand guard, the label or name that has been applied to the knife, etc. There are no "good knives;" there are no "bad knives."

This concept, (that it is the criminal, and not the tool, that causes the crime), is long established and well recognized in the history of our law and culture. For instance, in the *Torah* it is stated:

"The sword is not the cause of murder, and there is no sin upon him who made it." Rambam, Commentary on Beresheis 4:23.

The labels of very commonly prohibited styles or types of knives, such as "dirk," "dagger" or "stiletto," had meaning several hundred years ago. But the historic distinctions have become largely meaningless due to, among other factors, advances in metals technology; developments in weapons technology; and other cultural changes.

For instance, a style of knife, which came to be known as the "stiletto," was developed approximately 500 years ago. The name "stiletto" derives from the Latin word "stylus".¹ These knives featured a relatively long blade in comparison to the triangular or rectangular cross section of the blade which tapered to a point. Although these knives were made of iron or steel, the latter being a derivative of iron, metals technology was in a rather primitive state in those

times. The triangular, or occasionally rectangular, cross section was necessary to give the blade or stylus strength or rigidity.

A stiletto did not have a cutting edge.² Rather, a stiletto was intended purely as a thrusting or stabbing instrument. The edge of a stiletto blade was not suitable for slashing or cutting, although the tip might be capable of inflicting a shallow wound if used in a raking manner.

The objective of the stiletto was to provide a weapon that could exploit the openings or interstices of armor plate, or perhaps pierce body armor composed of layers of leather and/or chain mail. A stiletto was a pointer that could be used to stab. The stiletto was often used as a companion to the sword, with the stiletto being held in the non-dominant (typically the left) hand. The stiletto was fitted with a cross guard so that it could be used to parry the opponent's sword. One could stab a watermelon with a stiletto and easily push the blade completely through the mid-section of the fruit. However, one could not slice a watermelon with a stiletto.

men's knives were not designed to be weapons, despite the fact that they could be readily used as such and still be useful for everyday common and lawful purposes.

Over the years, there has been a tendency to apply the label "stiletto" to knives with a relatively flat or shallow wedge-shaped cross section, and which would have a sharpened cutting edge capable of being used for slicing. The label "stiletto" has also been applied to a type or style of woman's shoe. A large segment of the population is more likely to associate stiletto with a type of woman's footwear than as a type of weapon. Moreover, a very small percentage of the population can be expected to have any appreciation for the type of weapon which came to be known in 16th century Italy as the stiletto.

In 2008, the U.S. Supreme Court held that the Second Amendment to the United States Constitution guarantees an individual right rather than a collective or militia-only right.³ In other words, individuals or ordinary citizens have the right to keep and bear arms. *Heller* also established that for purposes of

Vague laws fail to provide persons targeted by the law or statute with guidance so that they may know exactly what conduct is prohibited and so that they may adjust, or act, accordingly.

Advances in metallurgy have made possible relatively flat-bladed, but equally strong, "kitchen knives" that can accomplish the same offensive purpose of the stiletto. A knife that we would now use to slice sections of a watermelon, and which would be found in the typical kitchen, would also be suitable for thrusting through the melon. Similarly, a modern fisherman's fillet knife would also be effective for inflicting a stabbing wound, perhaps through 16th century body armor. These typical, everyday kitchen knives and sports-

the Second Amendment arms was not confined to "firearms" but rather within the common 18th century understanding of that word, "anything that a man wears for his defense, or takes into his hands or useth in wrath to cast at or strike another."

In 2010, the U.S. Supreme Court held that the provisions of the Second Amendment to the United States Constitution are incorporated into the Fourteenth Amendment to the United States Constitution and apply to state and local governments as well.⁴ In other words, the



ability of state and/or local governments to infringe or restrict the possession and carrying of arms, which includes knives, is also limited by the Second Amendment to the United States Constitution.

The United States Constitution provides, and has been interpreted to require, that laws must not be so vague that persons of common intelligence must necessarily guess at their meaning and might differ as to their application.⁵ Vague laws fail to provide persons targeted by the law or statute with guidance so that they may know exactly what conduct is prohibited and so that they may adjust, or act, accordingly. Moreover, vague laws, by failing to provide explicit standards for those who apply them, "impermissibly delegate basic policy matters to policemen, judges, and juries for resolution on an *ad hoc* and subjective basis, with the attendant dangers of arbitrary and discriminatory application."⁶

A vague law is especially problematic where "the uncertainty induced by the statute threatens to inhibit the exercise of constitutionally protected rights."⁷ The Second Amendment to the United States Constitution creates a constitutional right to keep and bear arms, which includes arms in the classic traditional sense, meaning weapons, along with a subset of arms referred to as "firearms."

A common pattern in knife legislation has been to prohibit the carrying of certain specified types of knives or weapons, such as a "stiletto" or "dagger," without a definition of the prohibited type. In a world or culture where the word "stiletto" has so substantially deviated from its original meaning, there is too much potential that a criminal conviction for possessing a "stiletto" could be the result of an arbitrary and/or discriminatory application or process of law. An otherwise law-abiding citizen should not be adjudged a criminal simply because what may once have been a commonly recognized label is now widely misunderstood. Similarly, an otherwise law-abiding citizen should not be exposed to arbitrary or discriminatory action by law enforcement who may be applying an expansive and very flexible definition of

what constitutes stiletto or dagger.

AKTI suggests that law-abiding citizens should be able to carry knives and cutting tools without arbitrary and ineffective restrictions as to blade shape, style, length or other such characteristics. Although it may be prudent to prohibit weapons of any type from being introduced into certain settings such as court facilities.

AKTI further suggests that to the extent there are existing laws which prohibit the possession or carrying of certain types of knives, these laws must be construed narrowly and with deference to the United States Constitutional requirement of due process, as well as the right reserved to the citizens by the United States Constitution and the Constitutions of various states to keep and bear arms. AKTI encourages those involved in law enforcement and the administration of criminal justice to be guided by these definitions. People in these roles typically take an oath to uphold the United States, as well as the applicable State Constitution.

It must be noted that although these definitions are approved by AKTI, AKTI cannot require any particular officer or court to observe them. Accordingly, AKTI cannot be responsible for any adverse consequences deriving from the misapplication or failure to apply these recommended definitions.

Various laws concerning knives involve a blade length. However, there is an extremely wide variety of blade shapes and handle shapes. In the absence of an objective and standardized method for determining blade length, there is the possibility of inconsistent enforcement. AKTI has developed a Protocol for Measuring Knife Blade Length.

APPROVED KNIFE DEFINITIONS

ARKANSAS TOOTHPICK – A fanciful name for a large, straight-bladed knife. See "Bowie Knife" below.

BALLISTIC KNIFE – A device by which a blade becomes separated from the handle and is propelled or becomes a missile, utilizing energy stored by some mechanism within the device. A ballistic knife does not include a cross bow, spear gun, or archery bow. Further, the term ballistic knife does not include an implement described or labeled as a "throwing knife" unless the blade of such throwing knife becomes separated from the handle during the intended and normal use of the device.

Comments: Among those states which currently prohibit "ballistic knives" are Colorado, Florida, Georgia and Virginia. Examples of a practical ballistic knife are unknown. It is not inconceivable, however, that prohibitions as to ballistic knives might inappropriately be applied to a knife designed to be thrown.

The distinguishing feature of a ballistic knife is that the blade can be launched or propelled as a projectile or missile separate from the handle. The AKTI suggested rule of thumb is that if the blade is not separated and propelled from the handle mechanically, it is not a ballistic knife.

A version of a ballistic knife was produced in limited quantities for the Soviet-era military. These devices utilized a blank firearm-type cartridge to propel the blade.

Other variations of propelled-blade knives have been produced in limited quantities utilizing spring action to separate and propel the blade. The notion of a ballistic knife is more chimerical and fanciful than realistic or practical. AKTI suggests that it would be a misnomer to classify any such device as a knife.

BOWIE KNIFE – It is the position of AKTI that the term “Bowie Knife” is too vague and cannot be satisfactorily defined with sufficient precision. Accordingly, any law which provides an offense has been committed by one who possesses or carries a “Bowie Knife” is constitutionally defective.

Comments: “Bowie” knives are prohibited in such diverse states as Texas, Rhode Island, Illinois and Idaho. There is, however, no definitive criteria as to what exactly constitutes a Bowie knife.

In September of 1827, a small group of individuals gathered on a sand bar along the river at Natchez, Mississippi for the purpose of fighting a duel. The members of this group included James Bowie, who was actually a “second” rather than one of the two principals to the duel. At some point, the orderly conventions of the duel were abandoned, and a melee developed, during which Bowie sustained three separate gunshot wounds, several edged-weapon wounds, and other trauma. Using a knife of some type, Bowie inflicted fatal wounds on two opponents.

There is no known definitive description or drawing of the knife that Bowie used in the 1827 Natchez sand bar fight. The whereabouts or disposition of the knife is similarly unknown.

Bowie’s success in that encounter caused him to achieve considerable celebrity, and the term “Bowie Knife” quickly entered the lexicon. Everyone wanted a knife like that of Bowie, although few knew exactly what it looked like.

In the late 1820s and early 1830s, schools of knife fighting were established in and around New Orleans, Louisiana to teach the technique of fighting with the “Arkansas Toothpick” and/or “Bowie Knife.”⁸ Concurrently, states in the lower Mississippi drainage acted to outlaw such knives. Typical of these was the Tennessee Law at Chapter 137 of the Acts of 1837-38, which provided as follows:

“Any person who carries under his cloths, or concealed about his person, a Bowie Knife, Arkansas Toothpick, or other weapon of like form, shape, or size, is guilty of a misdemeanor, . . .” Section 6630 of Shannon’s Code (Tennessee).

While these laws have been kept “on the books” by legislative inertia in the intervening 170 or so years, the label “Bowie

Knife” has been applied to a wide variety of styles. No agreement exists among historians as to exactly what constitutes a Bowie Knife. Given this uncertainty and a lack of agreement among people who have exhaustively studied and researched the topic, AKTI suggests that “Bowie Knife,” and for that matter “Arkansas Toothpick,” are terms simply too generalized and vague, and about which there would be too much potential for inconsistent application as to be enforceable under the United States Constitution.

If historians who have studied and researched the topic are incapable of agreeing on a definition of a Bowie Knife, then ordinary persons are not given sufficient guidance so that they may know exactly what is or is not prohibited.

DAGGER – A knife-like object having a fixed blade uniquely suitable for inflicting a stabbing-type wound; lacking an effective cutting edge; and not having some common lawful purpose.

Comments: There is a long list of American jurisdictions where daggers are prohibited. Among those states are Hawaii, Massachusetts, Minnesota, Missouri, New Mexico and Iowa. However, there is no definitive basis as to why governments should prohibit daggers. Moreover, there is no guidance as to whether any given object is or is not a dagger. The California statutory definition is illustrative.

As used in this section, a ‘dirk’ or ‘dagger’ means a knife or other instrument with or without a hand guard that is capable of ready use as a stabbing weapon that may inflict great bodily injury or death. A non-locking folding knife, a folding knife that is not prohibited by Section 653K, or a pocketknife is capable of ready use as a stabbing weapon that may inflict great bodily injury or death only if the blade of the knife is exposed and locked into position.

West’s Annotated California Penal Code, Section 12020(c)(24).

The California law provides that any person who “carries concealed upon his or her person any dirk or dagger” is subject to punishment by imprisonment for a period not exceeding one year. Section 12020(a)(4).



There is obviously a problem where a fundamental right reserved to the people under the Constitution is infringed by such an arbitrary and indefinite state law. We have the right to keep and bear arms. If the state must, for some compelling reason, restrict this right, then it must do so in the least restrictive manner and with specificity.

The answer to the question of whether an item is or is not a dagger should not be determined on the basis of the identity of the person possessing the object nor, for that matter, the whim of a law enforcement officer. It should not turn on whether the person is wearing a biker vest or a vested suit. Moreover, a citizen should not need to seek expert advice from a military historian.

It is suggested that the AKTI Definition provides sufficient clarity and allows all concerned to make an informed decision as to whether possession of a given knife is legal.

Many knives which have a point, or even what would be recognized as a sharp point, nevertheless have a common, lawful purpose because the knives also have an effective cutting edge. Similarly, there is a large universe of tools which would be suitable for inflicting a stabbing wound and lack an effective cutting edge. Some typical examples would include ice picks, awls, scribes, carpenter’s chisels or gouges, engraver’s tools, screwdrivers, etc. Accordingly, the clauses within the definition are joined with a conjunctive (and) rather than a disjunctive (or). A knife or knife-like object having the elements of this definition would be primarily useful as a weapon for either offensive or defensive purposes.

AKTI notes that Section 5.07 of the Model Penal Code, captioned “Prohibited Offensive Weapons,” provides:

... “Offensive Weapon” means any bomb, machine gun, sawed-off shotgun, firearm specially made or specially adapted for concealment or silent discharge, a blackjack, sandbag, metal knuckles, **dagger**, or other implement for the infliction of serious bodily injury that **serves no common lawful purpose** (Model Penal Code Section 5.07 - emphasis supplied).



Obviously, a bomb is an offensive weapon. However, the Model Penal Code essentially outlaws **all** bombs. The authors of the Model Penal Code do not define dagger, and offer no explanation as to why this type of knife would be suitable **only** for offensive uses and why it would have no other common, lawful purpose. AKTI suggests that a knife with an effective cutting edge, or even two cutting edges, can be a useful tool for innumerable lawful and especially defensive purposes. Similarly, there are numerous cutting or carving tasks which require a sharp point. A definition of dagger which would criminalize knives with one or more effective cutting edges, simply because it would also be capable of inflicting a stabbing wound, is overly broad and ignores the reality that almost any cutting tool can be used as a weapon.

The AKTI suggested rule of thumb is that if it folds, has an effective cutting edge, or a common lawful purpose, it is not a dagger.

DIRK – A knife-like object having a fixed blade uniquely suitable for inflicting a stabbing-type wound; lacking an effective cutting edge; and not having some common lawful purpose.

Comments: Various states, including California (see above), Connecticut, Maine, Ohio, Georgia, New Mexico, Minnesota and Idaho prohibit dirks.

Dirk is often used interchangeably with dagger, stiletto or other weapons of the same general category, such as baselard, quillon, main gauche, etc. It is the position of AKTI that the definition of stiletto, dagger and dirk should effectively be the same.

A modicum of research will reveal that what is now understood to be the "classic" or historically correct example of a "dirk" developed in mid-17th century Scotland.⁹ This type of knife generally had one cutting edge with perhaps an opposing "swedge" near the tip. The English government passed "Disarming Acts" in 1716 and 1725 in response to Scottish uprisings. These Acts focused on, among other things,

Scottish swords and dirks. After another Scottish uprising in 1745-1746, the government outlawed kilts, clan tartans and other *indicia* of Scottish culture. It may be that there is a historical "anti-dirk" bias in Anglo-American law.

In the first half of the 19th century, a type of short sword, labeled the "**naval dirk**," began to appear.¹⁰ The naval dirk seems to have been more ceremonial than practical and was issued to or carried by mid-shipmen or young officers in training. This short sword was abandoned as the 19th century came to a close. In any event, the naval dirk bears almost no resemblance to the Scottish dirk which developed 200 years earlier. It is mentioned here to show that labels are often adopted or applied to different types of knives.

GRAVITY KNIFE –

1. A specific type of knife as issued to World War II German paratrooper (Fallschirmjager) units.

2. A folding knife in which the blade is held in the closed position by a latch mechanism released by a button on the handle of the knife and lacking some feature, such as a detent, spring over-center or other such mechanism which creates a bias toward closure.

Comments: Gravity knives are prohibited in such diverse states as Alaska, Connecticut, Colorado, Maine, North Dakota and New York. AKTI is not aware of any cutlery manufacturer producing and manufacturing a so-called gravity knife.

The 1958 Federal Switchblade Act defines "switchblade" knife as any knife having a blade which opens automatically-

1. By hand pressure applied to a button or other device in the handle of the knife, or

2. By operation of inertia, gravity, or both.¹²

The term "gravity knife" occurs in a number of places within the legislative record concerning the 1958 Federal Switchblade Act. In those instances, there are specific references to the World War II German knife.¹³

Two alternative definitions are offered for the simple reason that there are essentially two different gravity knives.

There was perhaps a time in the post-World War II period extending into the mid-

1950s, when souvenir German military paratrooper's knives, brought back to this country, were routinely carried. These knives are rare and have long since become highly sought after by collectors.

In normal use, the gravity knife was held in a vertical alignment with the front of the handle in the down position. Depressing a small lever or switch on the handle of the knife released the blade, and the gravitational force of the earth pulled it down and into a position where it mechanically latched or locked into the open position. As an alternative to gravity, the user could generate centrifugal force by a flourishing movement of the arm, along with a coordinated release of the lever, and the blade would move into the open and locked position by means of inertia. This more flamboyant method was preferred by teens of the late 1950s (see below discussion as to Switchblades) and explains why many of the laws dating from the mid-to-late 1950s, which proscribed switchblade knives, also apply to so-called "inertia knives." The intent was to include the Fallschirmjager knife.

Fallschirmjager knives are, of course, limited in number and typically command prices in the range of \$500.00 to \$750.00. Detailed photographs and additional information as to *Fallschirmjager* knives is available on the internet, and there is a certain commerce in these knives through online auction services.

It should be noted that this paratrooper's knife was not designed as a weapon, but rather as a tool to be used by an unfortunate paratrooper who became entangled in a tree during a descent. The blade could be exposed with only one hand and could be used to cut the shroud lines, the harness, or perhaps small branches.

The 1950's Gravity Knife: An alternative version of the gravity knife evolved, most likely due to state switchblade laws. Most of the switchblades popular with teenagers and young adults in the 1950's were imported from Italy. When prohibitions against spring-activated switchblade knives were put into effect, the Italian manufacturers simply removed the spring, which was compressed by the act of closing the blade and which supplied the energy to open it when the button on the handle was depressed. Outwardly, these knives resembled the switchblades. They did not have the spring action. Rather, the user would simply hold the knife in the horizontal posi-

tion and depress the button or latch on the handle, which would release the blade. The force of gravity would cause the blade to pivot. A simple wrist movement continued the movement of the blade to the fully open position, whereas in the case of the switchblade, it would lock. Alternatively, centrifugal force could be substituted for gravity.

While the gravity knife prohibitions were enacted to address an alternative to the switchblade, the gravity knife statutes are routinely applied to knives which cannot be opened by gravity and were never intended to be the subject of those 1950 era laws.

In 2009, the Federal Switchblade Act was revised so the gravity or inertia provisions would not be misapplied. The effect of the 2009 change is that the prohibitions of the Federal Switchblade Act do not apply to:

A knife that contains a spring, detent or other mechanism designed to create a bias toward closure of the blade and that requires exertion applied to the blade by hand, wrist or arm to overcome the bias toward closure to assist in opening the knife.¹⁴

Several states, notably Texas and Kansas, have enacted similar changes.

The AKTI suggested rule of thumb is that if it does not have a button or latch on the handle which releases the blade, if it cannot be opened by gravity alone, or if it does have a spring, detent or other mechanism providing bias toward closure, it is not a gravity knife.

INERTIA KNIFE – See discussion and Comments relative to Gravity Knife.

SWITCHBLADE – A knife with a blade that is exposed in an automatic way and moved from the closed position to the open position exclusively by the release of a compressed spring. A switchblade knife does not include a knife that opens with one hand, utilizing thumb pressure applied to the blade or to a thumb stud or declivity on the blade, nor does switchblade include a knife with a blade that can be opened by means of inertia or other such force produced by hand, wrist, arm or other bodily movement, provided that the knife has a detent or other system that pro-

vides resistance which must be overcome in opening the blade, or that provides a bias or spring load toward the closed position.

(Also described as switch knife, flick knife or spring knife.)

Comments: States where switchblades are not prohibited are in the minority. Among them are Alabama, Arizona, and Oregon. Approximately one quarter of the states resisted the impulsive rush of the 1950 decade to outlaw switchblades. Several states, South Dakota and New Hampshire, have repealed switchblade prohibitions. Interestingly, an examination of Uniform Crime Report data does not suggest a relationship between crime levels including knife / cutting instrument crime and switchblade prohibitions.

Blackboard Jungle, a movie set in an urban high school, was released in March of 1955. The movie generated an extraordinary level of excitement among American youth.

Glenn Ford was cast in the role of an ethical, well-intentioned teacher named Richard Dadier, where he was opposed by the switchblade-wielding gang leader, Artie West, played by Vic Morrow. West derisively referred to Dadier as “Dadio,” a name which quickly entered the teen lexicon as a term of disrespect for teachers or adult authority figures.¹⁵

In October of 1955, Rebel Without a Cause, featuring James Dean in the role of a disaffected teenager, was released. This movie included a knife confrontation scene, which came to be a common feature in youth movies of that era. Teenagers adopted not only the language, but the clothing and props of the movie figures, which included switchblades.

The response was similar to that of the English government in reaction to the Scottish uprisings of the early 1700s—Disarming Acts (see above Comments as to Dirk). Many states moved quickly to outlaw switchblades with the Federal government enacting legislation in 1958, banning the production of switchblades for interstate commerce or sending switchblades through the mail.

Switchblade knives had been manufactured and widely sold since the early 20th century. Until these knives were stigmatized by movies such as Blackboard Jungle, they were commonly used by farmers and blue-collar workers throughout the first half



of the 20th century who wanted a convenient way to open a pocketknife for some everyday task. Beginning in the mid-to-late 1950s, the switchblade took the place of the black handlebar mustache as a mark of the theatrical villain. In retrospect, the switchblade laws of the 1950s were an expediency of questionable constitutionality hurriedly passed to address a problem greatly magnified, if not created, by the movie industry.

Switchblades are also sometimes referred to as “Automatics.” It is the position of AKTI that a “Switchblade” or “Automatic” is a knife in which the blade is open or exposed solely by means of stored mechanical energy released by a switch or the triggering mechanism, typically a button located on the handle of the knife. Accordingly, a knife in which there is some spring or mechanical assist would be excluded from this definition, provided that there is some bias or a spring load to the closed position and which must be overcome by thumb, finger or other manual movement applied to the blade.

STILETTO – A knife-like object having a fixed blade uniquely suitable for inflicting a stabbing-type wound; lacking an effective cutting edge; and not having some common lawful purpose.

Comments: Stilettos are prohibited in, among other states, Connecticut, Iowa, Missouri, North Dakota and New Mexico.

See Comments relative to Dagger above.

ADDITIONAL DEFINITIONS

BIAS TOWARD CLOSURE - The tendency to remain in the closed or folded position, imposed by a spring or mechanical load, unless acted upon by manual force.

(continued page 6)



EFFECTIVE CUTTING EDGE - An edge capable of performing ordinary, routine cutting tasks associated with activities such as food preparation or food service, or other common uses, including but not limited to farming, animal husbandry, gardening, building trades, hunting, fishing or any trade or crafts.

See Appendix and Drawings that follow.

¹The Book of the Sword, Richard F. Burton, Shatto and Windus, London 1884.

²Daggers & Fighting Knives of the Western World, Harold L. Peterson, Walker & Company, New York, 1968, page 50.

³District of Columbia v Heller, 128 S Ct 2783 (U S 2008).

⁴McDonald, et al v City of Chicago, et al., 130 S Ct 3020, (U S 2010).

⁵Smith v. Gogan, 415 US 5666 (1974).

⁶Garyned v. City of Rockford, 408 US 104 (1972).

⁷Colautti v. Franklin, 439 US 379 (1979).

⁸The Complete Book of Knife Fighting, William L. Cassidy, Paladin Press, 1975.

⁹Daggers & Fighting Knives of the Western World, Harold L. Peterson, Walker & Company, New York, 1968, page 60.

¹⁰A swedge is typically beveled, as if to form a cutting edge, but is not finished or ground to form an actual effective cutting edge.

¹¹Daggers & Fighting Knives of the Western World, Harold L. Peterson, Walter & Company, New York, 1968, page 67.

¹²15 U.S.C Section 1241(b).

¹³House of Representatives, Subcommittee and Commerce and Finance Meeting of April 17, 1958.

¹⁴15 U.S.C Section 1244(5).

¹⁵“...who walks into the classroom cool and slow, who calls the English teacher Daddy-O...” Lines from a popular song: “Charlie Brown,” by the Coasters, circa 1958-1959.

APPENDIX

Comments on "Bias Toward Closure"

(See Drawings on pages 7and 8.)

In the typical folding knife, the blade swings or pivots in an arc of approximately 180° from the closed position (within the handle) to the open position. Without some means of providing a bias or lock to the closed position, the knife could swivel open, or at least partially open, unexpectedly or unintendedly.

There are a few folding knives in production which do not incorporate some sort of mechanical bias toward closure feature.

An example of this type of knife is the Opinel knife, produced in France for over 110 years. The blade is kept in the closed or folded position by a friction fit with the wooden handle piece. A rotating collar can be turned to provide a mechanical lock when the blade is in the open position.

An old-fashioned "Straight Razor" is another example of a folding knife-like device with no bias or other such mechanism to hold it in either the closed, or for that matter, the open position. (See Figure 1)

A common design for providing a spring-loaded bias to both the closed and fully open position utilizes a bar spring, which applies pressure, or a spring load, against the base of the blade near the pivot point. This design is referred to as the "Slip Joint Knife." (See Figure 2) The direction of the spring load is from the outer edge of the blade toward the center of the pivot hole. When the blade is in the fully open position, the force or load of the spring tends to keep the blade in that fully opened position. Folding or closing the knife requires a certain amount of exertion to overcome that bias and pivot the blade into the handle.

When the blade is in the fully closed position (Figure 2C), the pressure of the back spring similarly tends to hold the blade closed within the handle of the knife.

Opening the blade requires a force to overcome the camming action created by the eccentric tang or base end of the blade. For the first 45° (approximately) of pivot, there is a bias toward the closed position. After this 45-degree rotation, there is friction resistance until the blade is pivoted in an arc of approximately 135°. At approximately that point the bias is often capable of moving the blade to the fully open position.

The slip joint design has been in use for well over a century and has the advantage of providing both bias toward closure and bias toward the fully open position. In short, it is a time-tested, simple design that is reasonably effective in keeping the blade in either the fully open or fully closed position.

(Figure 3) shows a type of knife frequently referred to as the lock back. This design utilizes the same type of bar spring to provide the bias toward opening, as well as the bias toward closure. In that respect, it is similar to the slip joint design. It does have a design feature intended to enhance user safety by providing a positive lock mechanism to the fully open position. The lock back design utilizes a notch or mortise at the base of the blade into which a tenon or projection of the back spring locks when the blade is pivoted to the fully open position. Closing of the knife requires the user to depress the spring and release the lock.

Another method of providing a bias to the closed position utilizes a leaf-type spring, which provides lateral pressure, rather than a back spring. This design is generally referred to as the liner lock and is attributed to knife designer Michael Walker, who developed this design in the 1970's.

The liner lock features a small depression or detent on the blade near the pivot hole. When the blade is in the fully closed position, this detent is engaged by a ball partially embedded or set in the liner, which is sandwiched between the blade and one side of the handle when the knife is in the folded or closed position. The leaf spring is anchored or fixed at the rear end of the handle. The lateral spring load of the liner pushes the ball into the detent and tends to keep the blade in the closed position.

Opening the blade requires sufficient force to overcome the spring load, and by camming action, force the ball against the load and out of the detent. As the blade swings or pivots in the arc toward the fully open position, the spring load continues to exert pressure, and accordingly friction, which must be overcome to move the blade.

Once the blade is moved to the fully open position, the spring-loaded liner moves laterally into a position which keeps

the blade from closing.

The liner with the ball detent design provides bias toward closure and a means of locking the blade in the fully opened position.

A common variation of this ball detent mechanism simply utilizes the frame or handle of the knife as the leaf spring. Such knives are typically known as "frame lock knives." The ball detent mechanism is more easily observed in the frame lock design, as opposed to liner lock knives. Figure 4 shows a typical frame lock design.

There are other methods of achieving bias toward closure. The 2009 Amendment to the Federal Switchblade Act, 15 U S C § 1244(5) and the laws of several states, including California, Kansas and Texas, which incorporate the concept of bias toward closure, do not require or prescribe a particular mechanism. Rather, all that is required is that the design provide bias toward closure. Moreover, none of these laws specify a minimum measure of bias.

STRAIGHT RAZOR

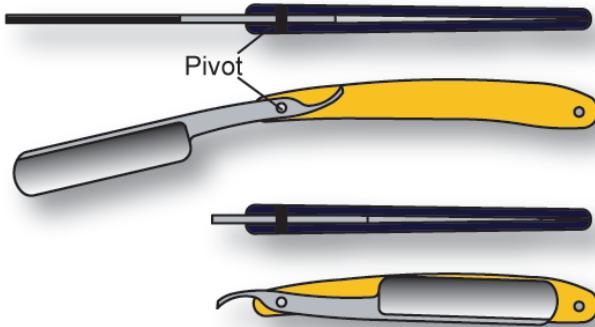


Figure 1

Straight Razor — No Bias

In the typical folding knife the blade swings or pivots in an arc of approximately 180° from the closed position to the open position. Without some means of providing a bias or lock to the closed position, the knife could simply swivel open unexpectedly—for instance, while in the user's pocket exposing the blade and creating a potential for injury.

An old-fashioned "straight razor" is an example of a folding knife-like device with no bias or other such mechanism to hold it in either the closed, or for that matter, the open position. (See Figure 1)

Drawings provided by Buck Knives
and are the property of AKTI.



SLIP JOINT KNIFE

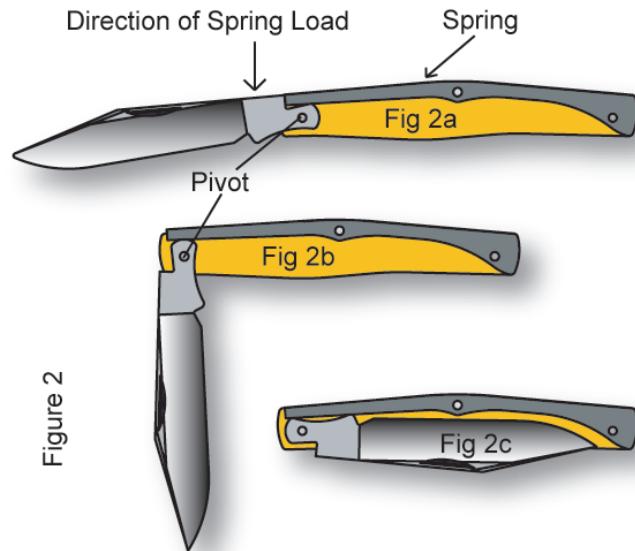


Figure 2

A common design for providing a spring-loaded bias to both the closed and fully open position utilizes a spring which applies pressure against the base of the blade near the pivot point. This is referred to as the "slip joint knife." (See Figure 2) The direction of the spring load is from the outer edge of the blade toward the center of the pivot hole. (See Figure 2)

When the blade is in the fully open position, the force or load of the back spring tends to keep the blade in the fully open position. (See Figure 2A)

When the blade is in the fully closed position (Figure 2C), the pressure of the back spring similarly tends to hold the blade closed within the handle of the knife.

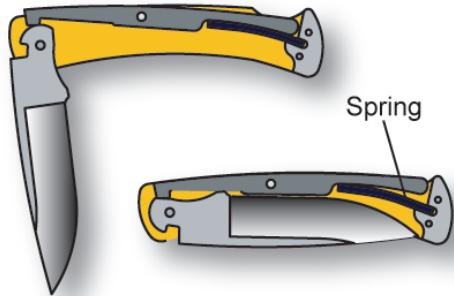
Opening the blade requires a force to create a camming action. For the first 45° of pivot, there is a bias toward the closed position. After the blade has been pivoted toward the open position in an arc of approximately 135°, there is a bias toward the fully open position. Such bias toward the open position, which begins at approximately 135°, is often capable of moving the blade to the fully open position.



FOLDING KNIFE with LOCK FEATURE



Figure 3



Folding Knife with Lock or Lock Back

Figure 3 is a simple variation which utilizes a notch or mortise at the back of the blade into which a tenon or projection of the spring locks when the blade is pivoted to the fully open position.

Another method of providing a bias to the closed position and/or resistance which must be overcome to manually open the blade of a folding knife utilizes a spring load applied against the side of the blade.

FOLDING KNIFE WITH BALL DETENT

(frame lock design)

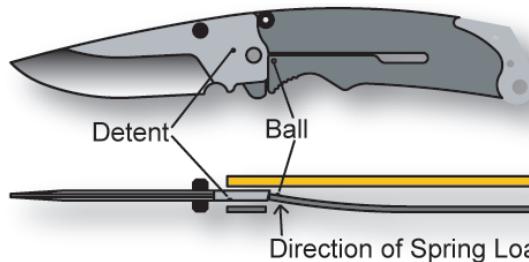
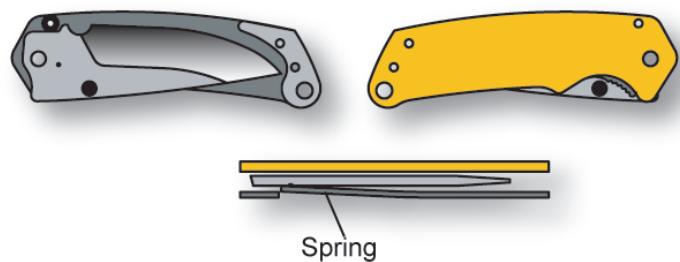


Figure 4



Folding Knife with Ball Detent

Typically, there is a small depression or detent on the blade near the pivot hole. When the blade is in the fully closed position, this detent is engaged by a ball partially embedded or set in the spring. (See Figure 4)

Opening the blade requires sufficient force to overcome the spring load, and, by camming action, force the ball against the load and out of the detent. As the blade swings or pivots in the arc toward the fully open position, the spring load continues to exert pressure, and accordingly, friction, which must be overcome to move the blade.

In Appreciation

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